

**Special Review of  
Fire Protection District  
Defined Benefit Retirement Plans**

**for the  
Joint Committee On Public Employee Retirement  
of the  
State of Missouri**

**April 5, 2002**

**Gabriel, Roeder, Smith & Company**



**Consultants & Actuaries**

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April 5, 2002

The Joint Committee on  
Public Employee Retirement  
State of Missouri  
c/o Ms. Claire West, Executive Director

Ms. West:

*Submitted in this report* are the results of our review of the actuarial valuation reports of selected Fire Protection District Defined Benefit Pension Plans.

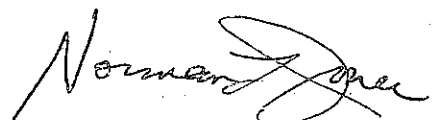
*The statistical data and reports* on which the study was based were furnished by the Joint Committee on Public Employee Retirement via the Executive Director and her staff.

*Your attention is directed particularly* to the findings on pages 5 and 6 and the recommendations on pages 7 and 8.

*We thank the Committee* for the opportunity to work with them.

Respectfully submitted,

  
Judith A. Kermans, EA, MAAA

  
Norman L. Jones, FSA, MAAA

MKJ/lr

# INTRODUCTION AND BACKGROUND

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## BACKGROUND

The fire protection districts reviewed in this report are independent taxing jurisdictions. The contributions that support the retirement plans for these districts are derived from property tax levies within these jurisdictions. A separate board governs each fire protection district's retirement plan, has fiduciary responsibility and contracts for its own actuarial and investment advice. Each retirement plan has an actuarial valuation performed each year. We were asked to review each plan in light of the lump sum payment option available to participants at retirement.

## OBJECTIVES OF REVIEW

The objective of this review is to provide the Joint Committee on Public Employee Retirement (JCPER) an independent actuarial opinion of selected Fire Protection District Defined Benefit Retirement Plans. Our review evaluates, to the extent possible, the following items based on a brief study of the actuarial valuation reports for each district. The scope of the review, with particular consideration of the lump sum cash out option available to members of the plans at retirement, included:

- The financial position of each plan,
- The overall appropriateness of actuarial methods and assumptions,
- The mathematical development of results for general reasonableness and applicability to public sector plans,
- Benefit payment and plan liquidity needs vs. asset levels and composition.

The main objective was to determine if the lump sum cash out option available to participants at retirement could be causing a deterioration of the districts' retirement plans.

## INFORMATION SOURCES

The Joint Committee's Executive Director supplied the information used in this review. It consisted of copies of the most recent actuarial valuations for each district and summary statistics compiled by the JCPER. Additional information may have been obtained from communications with the retained actuaries for each plan.

## LUMP SUM CASH OUT OPTIONS

Lump sum distributions at retirement of accrued benefit rights are fairly common in the private sector, but quite uncommon in the public sector (although many public sector retirement plans are now offering partial lump sum options representing only a portion of accrued benefit values). If properly funded, lump sum distributions are not inherently good or bad. That is, in an adequately funded plan, the cash payout is exactly matched by a release of liability.

There are, however, certain situations in which such distributions may spell trouble for a retirement system:

- The discount (interest) rate used to determine the cash out amount is less than the interest rate used to fund benefits. For example, if all funding is based upon a 7% interest rate, but lump sum settlements are based on a 5% discount rate and the accrued retirement benefit at age 60 is \$1,000/month, the retirement system will incur a loss, as follows:

Funded pension reserve (@7%)	\$130,000
Lump sum distribution (@5%)	<u>156,000</u>
Actuarial loss	\$ (26,000)

The loss is avoided if the lump sum settlement rate is explicitly recognized in the valuation. Information furnished for the review was not sufficient to determine whether or not such losses were being incurred for many of the plans.

- A plan is only partially funded, in which case such distributions reduce the funded ratio and may force a re-allocation of plan assets. This asset re-allocation then may limit investment opportunities. For example, consider a plan in which several distributions occur over a relatively short time period:

	Before	After
Accrued liabilities	\$5,000,000	\$3,500,000
Assets	<u>3,000,000</u>	<u>1,500,000</u>
Unfunded accrued liability (UAL)	\$2,000,000	\$2,000,000
Funding ratio	60%	43%

In this example, the UAL remained at \$2 million, but the funded ratio dropped and the remaining asset pool was substantially depleted. A plan facing such prospects would likely have to structure its portfolio heavily in fixed income investments (to avoid the risk of having to liquidate in a down market). Hence, the expected return on fund assets would be less than would otherwise be the case.

## FINDINGS

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In a soundly financed retirement system, the funded ratio (ratio of assets to liabilities) should increase in the absence of benefit and/or assumption changes or unfavorable financial experience. Many retirement plans across the United States have experienced decreasing funding ratios recently because of unfavorable investment performance. Down markets combined with lump sum cash outs can pose problems in some situations. Increasing cash flow needs due to continued demand on cash because of lump sum options may ultimately limit investment opportunities. Plans with lump sum options at retirement need to be closely monitored to ensure that assets do not deteriorate to the point where promised benefits are in jeopardy.

### GENERAL FINDINGS

In some of the Fire Protection District Plans (FPDP), funded ratios have been deteriorating. This is likely the result of unfavorable investment performance combined with a deterioration of assets due to lump sum cash outs. As of the last actuarial valuation, some of the FPDPs were fully funded or nearly fully funded. The ultimate goal of sound financing is to achieve a 100% funded status when benefits become due. Those plans that are fully funded are likely not in any real financial danger in the short term. Plans with low funded ratios or whose financial position cannot be determined, should be reviewed further. Some of the actuarial valuation reports provide limited cash flow projection schedules that can be used to estimate emerging payouts due to retirements. All plans with a lump sum cash out option would benefit from this type of information. We have recommended additional cash flow analysis where needed.

### ECONOMIC ASSUMPTIONS

As mentioned earlier, increasing cash flow needs may ultimately limit investment opportunities. More money invested in fixed income securities means less money invested in equities and other potentially higher yielding assets. These changing needs should be considered when selecting investment assumptions. Most of the FPDPs have assumed rates of return commonly used in plans that provide traditional monthly pensions, rather than lump sum options. The assumed rates of return for the FPDPs are between 7.0% and 8.0%. From the information available, it was not clear whether or not assumed rates of return reflected the fund's investment policies.

## FINDINGS

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### ECONOMIC ASSUMPTIONS (CONTINUED)

Also, the interest rate used to calculate lump sum amounts at retirement are occasionally less than the assumed rate of return for the plan. Unless specifically recognized in the valuation process, this creates experience losses each time a lump sum option is elected and paid. In such cases, the funded position would be expected to erode further (see discussion on page 4).

### ACTUARIAL REPORTING

The Fire Protection District Retirement Plans, like all governmental retirement plans, are not subject to ERISA. Most pension actuaries in the United States work in the private industry rather than in the public sector. It is common for these actuarial firms to generate valuation reports, intended for public retirement plans, which are heavily geared towards private sector needs. This is unfortunate as the needs of public sector retirement plans are different. That was the case in several of the actuarial valuation reports reviewed here. Furthermore, some of the reports that complied with ERISA reporting requirements did not provide the necessary disclosures under the Governmental Accounting Standard Board (GASB), which apply to public plans. Public pension plans should satisfy GASB Statements #25 and #27 reporting standards.

## RECOMMENDATIONS

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Recommendations fall into the areas of reporting, minimum funding requirements, and monitoring.

### Reporting

A firm grasp of the FPDs' funded status and financial progress is dependent on having comparable information available. We recommend that the plans' actuarial reports be required to include at least the following information:

- Active, inactive and retired life participant data summaries including age and service or benefit amount.
- Summary of benefit provisions, including eligibility for lump sum distributions and a statement of the assumptions used to determine lump sum amounts.
- Summary of decrement assumptions.
- Summary of economic assumptions, including a statement certifying that if the lump sum distribution discount rate is different than the valuation interest rate, such difference has been recognized in the actuarial valuation.
- Valuation results based on the plan's established actuarial funding method.
- Valuation results based on the entry age normal cost actuarial funding method.
- Disclosures required by the Governmental Accounting Standards Board Statement No. 25.
- Five year cash flow projections which include expected revenue (contributions and investment income) and expenditures (benefit payments, lump sum distributions and/or annuity purchases).

### Funding

As indicated elsewhere in this report, lump sum distributions in a well funded plan with a stable or growing asset base are not necessarily a matter of financial concern. In a poorly funded plan with a shrinking asset base, such distributions may be of great concern. One method of addressing this issue is to impose stricter funding requirements as this funded ratio declines. We suggest the following:

<u>Funded Ratio*</u>	<u>Minimum Funding</u>
80% and over	Normal cost plus 30 year amortization of UAL (i.e., the GASB Statement #27 standard)
60% to 79%	Normal cost plus 20 year amortization of UAL
Under 60%	Normal cost plus 10 year amortization of UAL

*\*Based on either the entry age normal or projected unit credit actuarial valuation method.*



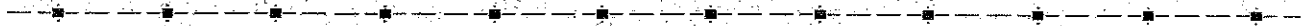
## RECOMMENDATIONS

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### Monitoring

Regular monitoring is a critical part of any successful financial program. We recommend that FPDs be required to submit actuarial reports annually to the JCPER and that the mandated information set forth of the preceding page be compiled. These compilations should be of value to the districts as well as to the policy makers – especially in cases where deterioration of a plan's funded status may call for further intervention.

# SUMMARY COMPARATIVE SCHEDULES



## VALUATIONS COMPARATIVE INFORMATION SUMMARY

Plan	Actuary	Actuarial Funding Method	Assumptions		Asset Valuation Method	Asset Allocation % in stocks
			Investment Return	Wage Inflation		
Affton	QBC Inc.	Aggregate	7.5%	4.5%	Market Value	N/A
Black Jack	Milliman & Robertson	Entry Age Normal	7.0%	5.0%	Contractual Value	N/A
Eureka	Principal Financial Group	Aggregate	7.0%	3.5%	Contractual Value	N/A
Fenton	Aon Consulting	FIL – Entry Age	8.0%/7.5%	5.5%	Market Value	50%
Florissant Valley	Milliman USA	Entry Age Normal	7.5%	\$1,200/yr.	Actuarial Value	N/A
Mehlville	Milliman USA	Entry Age Normal	8.0%	6.5%	5-Year Smoothed	N/A
Metro West	QBC Inc.	Aggregate	7.5%	5.0%	Market Value	50%
Mid County	Affiliated Pension Services	FIL – Entry Age	7.0%	N/A	Market Value	N/A
Rock Community	Milliman USA	Projected Unit Credit	7.5%	5.0%	Market/Contractual Value	N/A
Valley Park	Milliman USA	Projected Unit Credit	7.5%	4.0%	Market Value	N/A

## VALUATION COMPARATIVE INFORMATION SUMMARY

Plan	Lump Sum Option Available	Assumptions for Lump Sum	Does Valuation Indicate Emerging Liabilities Due to Lump Sums ?
Afton	Probably	Not stated	Yes. Half of active group is within 10 years of retirement. 11 members within 5 years of normal or early retirement.
Black Jack	Yes	12% interest, mortality unknown	No. Actuary indicates that large distributions due to lump sums should be over. Likely due to increase in interest rate basis.
Eureka	Unknown	Unknown	Yes. Report provides 10-year projection of "Emerging Retirement Liabilities"
Fenton	Yes	Valuation basis for retired lives	Yes. Table of "Expected Emerging Liabilities" provided and comments on liquidity needs due to lump sums given.
Florissant Valley	Yes	Monthly accrued benefit x 165	Yes. Table of "Participants Eligible for Retirement" provided. No liability projection given.
Mehlville	Yes	Valuation basis	Yes. Table of "Participants Eligible to Commence a Pension" provided. No liability projection given.
Metro West	No	N/A	N/A
Mid County	Yes	5.6% and UP-1984	Yes. Actuary indicates that a lump sum payable due to a 20-year benefit is approximately \$165,000. No projection of possible payments or retirements provided.
Rock Community	Probably Not	N/A	N/A
Valley Park	Yes	Not stated	Unknown. Insufficient information in report to draw any conclusions.

# VALUATION COMPARATIVE INFORMATION SUMMARY

## (THIS SCHEDULE PREPARED BY JCPER)

Plan	Active/ Retired Members	Assets/ Liabilities	Benefit Formula	Final Average Salary/ Period	Employee Contribution Rate	Employer Contribution Rate	Normal Retirement Eligibility	2001 GASB 25 Funded Ratio
AFFTON	34 6	\$4,512,957 / 4,512,957	65% of comp. Reduced w/<30 yrs.	3 years	Optional	15.30%	Age 60 w/5 YOS Early: Age 55 w/15 YOS	N/A
BLACK JACK	36 5	\$1,612,947 / 5,296,020	\$93 x YOS Supp. Estimated SS Ben to Age 62	N/A	None	22.30%	Age 60 or 30 YOS Early: Age 50 w/10 YOS	40%
EUREKA	26 9	\$2,097,343 / 2,097,343	2.5% of FAS x YOS Max 30 yrs	5 years	None	13.62%	Age 55  Early: 50 w/10 YOS Mandatory: Age 70	N/A
FENTON	50 8	\$14,293,694 / 16,354,677	3% of FAS x YOS Max 30 yrs or 90% of pay - Supp. \$13 x YOS age 55-65	5 years	None	15.00%	Age 55 w/15 YOS Early: 50 w/15 YOS Mandatory: Age 65	N/A
FLORISSANT VALLEY	62 3	\$3,929,926 / 6,111,499	2.5% of FAS x YOS Max 30 yrs	2 years	1%	12.39%	Age 60 or 30 YOS Early: Age 50 w/20 YOS	56%
MEHLVILLE	143 43	\$25,988,376 / 27,454,296	2.625% of FAS 1st 27 YOS +1% ea addtl yr. max 75%  Supp \$500/mo Age 55 to SS eligible	Highest 3 consecutive years	None	14.52%	Age 58 Early: 55 w/5 YOS Mandatory: Age 70	97%
METRO WEST	98 23	\$17,967,144 / 17,967,144	3.0% of FAS x YOS Max 33 1/2 yrs.	5 years	None	23.20%	Age 55 w/10 YOS Early: Age 50 w/10 YOS Mandatory: Age 65	N/A
MID-COUNTY	24 4	\$701,665 / 1,341,424	\$55 x YOS Max 20 yrs.	N/A	None	13.50%	Age 55 w/10 YOS Early: 50 w/10 YOS	N/A

# VALUATION COMPARATIVE INFORMATION SUMMARY

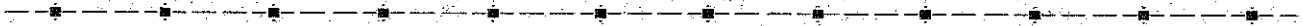
## (THIS SCHEDULE PREPARED BY JCPER)

Plan	Active/Retired Members	Assets/ Liabilities	Benefit Formulas	Final Average Salary/ Period	Employee Contribution Rate	Employer Contribution Rate	Normal Retirement Eligibility	2001 GASB 25 Funded Ratio
ROCK COMMUNITY	38 1	\$ 2,524,356/ 2,762,337	2% of FAS x YOS Max 30 yrs.	3 years	None	9.30%	Age 60 w/5 YOS  Early: Age 55 w/5 YOS	91%
VALLEY PARK	21 1	\$ 804,071/ \$983,040	1.75% of FAS x YOS Max 30 yrs	3 years  Early: None	None	12.80%	Age 55	N/A

MID-COUNTY - Excess receipts above the annual actuarially determined contribution rate are contributed to the district's defined contribution plan.

FAS = Final Average Salary  
YOS = Years of Service  
COMP = Compensation

# Plan Summaries and Comments



## PLAN SUMMARIES AND COMMENTS

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The following pages provide a summary of the relevant information available in the actuarial reports that were provided to GRS. The content of the actuarial reports varies greatly as a result of the actuarial methods and procedures used, the report presentation and style, the area of expertise of the actuary and the preferences and needs of the Retirement Board for whom the reports are produced.

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# AFFTON FIRE PROTECTION DISTRICT

## GENERAL INFORMATION

Most Recent Valuation Date: 1/1/2001  
Active Members: 34  
Retired or Disabled Members: 6  
Terminated Vested Members: 6  
Lump Sum Form of Benefit Payment Available: Probably

## ACTUARIAL INFORMATION

Actuarial Cost Method: Aggregate  
Assumed Rate of Return: 7.50%  
Assumed Rate of Payroll Growth: 4.50%  
Retirement Eligibility Conditions: Age 60 and 5 years of service. Early retirement is available at age 55 with 15 years of service on an actuarially equivalent basis.  
Retirement Assumptions: 100% at age 60 with 5 years of service (best guess)  
Mortality Assumption: 1984 Unisex Pension Mortality  
Types of Optional Forms of Payment: Not reported  
Calculation Basis for Optional Forms of Payment: Not reported  
GASB Information in Report: No  
Actuarial Consulting Firm: QBC, Inc., St. Louis

Historical Information					
Valuation Jan. 1	Valuation Assets <sup>@</sup>	Benefit Payments	Contribution Made	PVFB <sup>#</sup>	PVAB* Funded Ratio
1997	\$4,191,192	\$3,098	\$263,673	\$5,626,293	126%
1998**	5,510,540	3,098	N/A	6,205,547	141
1999	6,063,527	119,952	227,613	7,487,947	130
2000	5,842,267	556,401	276,397	7,486,104	118
2001	4,512,957	1,425,483	254,731	7,106,545	109

<sup>@</sup> Market Value used

\*Funded ratio reported on a Present Value of Accrued Benefits basis.

\*\*Report not provided.

<sup>#</sup> Present Value of Future Benefit Payments

## COMMENTS

The actuary notes in his comments that half of the active group is within 10 years of normal retirement age. Additionally, we note that one-third of the members would be eligible to normal or early retire within 5 years. There is no specific mention of lump sum benefit payouts in the report but a review of benefit payments (2001) lead us to believe there were lump sum distributions. Lump sums may also be available to terminated vested members. We were not able to determine the assumptions used for calculation of the lump sums. Benefit payments for members currently exceed incoming contributions.

## COMMENTS (CONTINUED)

- It should be determined whether this plan provides a lump sum cash out option and what assumptions are used for the calculation.
- If assumptions used for lump sum option calculations are favorable to members, there will be experience losses for the plan (unless provided for in valuation).
- Based on retirement eligibility, there could be several lump sum cash outs in the next decade, although it is unlikely that they would deplete assets in the fund.
- The Plan is fully funded. However, the funded ratio is decreasing. It may be difficult for this plan to maintain the current funded ratio in the face of further lump sum distributions and potential experience losses.
- As with many plans that provides lump sum cash outs, investment options will continue to be limited and the assumed rate of return may be unattainable.

**If this plan provides a lump sum cash out option, a cash flow projection of the plan to evaluate emerging pay outs would be beneficial. Asset allocation should also be reviewed.**

# BLACK JACK FIRE PROTECTION DISTRICT

## GENERAL INFORMATION

Most Recent Valuation Date: 1/1/2001  
Active Members: 39  
Retired Members: 2  
Terminated Vested Members: 2  
Lump Sum Form of Benefit Payment Available: Yes

## ACTUARIAL INFORMATION

Actuarial Cost Method: Entry Age Normal  
Assumed Rate of Return: 7.00%  
Assumed Rate of Payroll Growth: 5.00%  
Retirement Eligibility Conditions: Age 60 or 30 years of service. Early retirement is available at age 50 with 10 years of service on a reduced (6% per year) basis.  
Retirement Assumptions: 100% at normal retirement age but not before age 55.  
Mortality Assumption: 1983 Group Annuity Mortality  
Types of Optional Forms of Payment: Straight life with 5 and 10 years certain and lump sum  
Calculation Basis for Optional Forms of Payment: Lump sum was 4.25%, changed to 12% in 2000.  
Mortality basis is not reported.  
GASB Information in Report: Yes  
Actuarial Consulting Firm: Milliman USA, St. Louis

Historical Information						
Valuation Jan. 1	Valuation Assets <sup>@</sup>	Benefit Payments	Contribution Made	PVFB <sup>#</sup>	GASB Funded Ratio	PVAB Funded Ratio
1997	\$2,551,581	\$674,330	\$405,913	\$6,086,774	49.63%	
1998	2,415,737	637,779	400,000	6,336,059	44.10	
1999*	3,047,483	19,467	-	-	51.54	
2000	1,612,947	1,777,087	216,659	6,352,653	30.45	34.30%
2001	2,269,427	111,238	733,000	6,722,864	40.05	45.68%

<sup>@</sup> Contractual Value used

<sup>#</sup> Present Value of Future Benefits

\* Report not provided.

## COMMENTS

The report clearly states that a "Cash settlement" is available as an optional form of benefit payment. The 1/1/1998 report (pg2) notes that losses exist due to lump sum payments at a different basis than the valuation. In the 1/1/2000 report (pg2) the actuary makes a statement regarding a large benefit expense that should be the last of the lump sum distributions. This appears to be due to the increase to 12% for the interest rate used to calculate lump sums.

# EUREKA FIRE PROTECTION DISTRICT

## GENERAL INFORMATION

Most Recent Valuation Date: 2/1/2001

Active Members: 30

Inactive Members: 9

Lump Sum Form of Benefit Payment Available: Unknown

## ACTUARIAL INFORMATION

Actuarial Cost Method: Aggregate, annuities purchased at time of retirement and retirees are not in valuation.

Assumed Rate of Return: 7.00%

Assumed Rate of Payroll Growth: 3.5%

Retirement Eligibility Conditions: Age 55 or early retirement at age 50 with reduction.

Retirement Assumptions: 100% at normal retirement age

Mortality Assumption: 1983 Group Annuity Mortality

Types of Optional Forms of Payment: Unknown

Calculation Basis for Optional Forms of Payment: Unknown

GASB Information in Report: Some (GASB #27 NPO development, no funded ratios)

Actuarial Consulting Firm: Principal Financial Group Retirement Services, Des Moines, Iowa

Historical Information					
Valuation Jan. 1	Valuation Assets <sup>@</sup>	Benefit Payments <sup>**</sup>	Required Contribution	PVFB <sup>#</sup>	FAS35 - Funded Ratio <sup>##</sup>
1997	\$1,501,079	\$-	\$91,174	\$2,359,585	-
1998*	1,603,116	-	110,596	-	-
1999	1,833,194	-	110,941	2,791,522	-
2000*	2,097,343	-	138,861	-	156%
2001	2,413,895	-	176,443	4,010,604	155%

<sup>@</sup> Contractual Value used

\* Report not provided.

\*\* Retired lives not in valuation.

# Present Value of Future Benefit payments for actives and terminated.

## FAS35 calculation not relevant for public plans

## COMMENTS

The actuary for this plan provides a 10-year projection of "Emerging Retirement Liability". This can be used to estimate upcoming liquidity requirements. This projection indicates that, over the next 10-years, the total charge to assets to cover the present value of retirements is approximately 60% of **current** assets.

## COMMENTS (CONTINUED)

- We were not able to fully evaluate the current financial status of this plan due to the lack of relevant information reported. The actuary developed FAS35 calculations, which are not applicable to public plans. GASB funded ratios were not included in the report.
- We were also not able to determine if this plan provides a lump sum cash out option.
- The Plan's actuary believes and it is likely that the fund can sustain expected retirements during the next 10 years.

**This plan should be reviewed to make a final determination of financial status and sustainability. If funded ratios are low and lump sum cash out options are provided, a cash flow projection of the plan to evaluate emerging pay outs should also be undertaken. Asset allocation should also be reviewed.**

## FENTON FIRE PROTECTION DISTRICT

### GENERAL INFORMATION

Most Recent Valuation Date: 1/1/2001  
Active Members: 50  
Retired Members: 12  
Terminated Vested Members: 1  
Lump Sum Form of Benefit Payment Available: Yes

### ACTUARIAL INFORMATION

Actuarial Cost Method: Frozen Initial Liability, annuities purchased for retired lives, retired life assets and liabilities excluded from valuation.  
Assumed Rate of Return: 8.00% pre-retirement, 7.50% post-retirement  
Assumed Rate of Payroll Growth: 5.50%  
Retirement Eligibility Conditions: Age 55 for normal, age 50 for reduced early  
Retirement Assumptions: 100% at age 55 or attained age if greater.  
Mortality Assumption: 1983 Group Annuity Mortality, six year set back for women.  
Types of Optional Forms of Payment: N years certain and life, joint and survivor and lump sum  
Basis for Optional Forms of Payment: Valuation basis (1983 GAM, 50% male /50% female)  
GASB Information in Report: Yes, but GASB #5  
Actuarial Consulting Firm: AON Consulting

Historical Information					
Valuation Jan. 1	Valuation Assets@	Benefit Payments	Contribution Made	PVFB#	GASB## Funded Ratio
1997	\$11,453,788	\$3,171	\$600,000	\$13,842,691	117.1
1998	12,565,669	871,374	725,000	15,281,561	122.0
1999*	13,282,646	_*	_*	16,516,758	_*
2000	13,193,495	1,762,487	800,000	18,826,381	115.2
2001	14,293,694	81,960	760,000	20,932,954	109.2

@ Market Value used.

# Present Value of Future Benefits

## Funded Ratio is based on GASB #5 PBO values.

\* Report not provided

### COMMENTS

The report complies with GASB Statement #5 rather than GASB Statements #25 and #27. Funded ratios under statement number 5 will differ from those calculated under the proper GASB statements. The actuary has provided a table of "Expected Emerging Liabilities" and comments on liquidity needs due to lump sums. The table indicates that lump sum benefit expenses totaling \$5.8 million could be incurred over the next 5 years and \$13 million over the next 10 years.

#### COMMENTS (CONTINUED)

- The Plan is fully funded under GASB Statement #5. Although asset levels are sufficient to cover lump sum disbursements under the 'Expected Emerging Liabilities' schedule in the short term, cash outs will exert downward pressure on the funded ratio.
- Annuities are purchased at retirement. As long as annuity purchase rates are consistent with valuation assumptions, the selection of lump sum options will not cause additional depletion of assets than would otherwise be the case.
- Assets appear to be invested over 50% in stocks. Asset allocation may ultimately need to be modified.

**Plan raises no immediate concern but should continue to be monitored for potential depletion of assets and to review asset allocation. Financial status under GASB 25 should be determined.**

## FLORISSANT VALLEY FIRE PROTECTION DISTRICT

### GENERAL INFORMATION

Most Recent Valuation Date: 2/1/2001

Active Members: 62 (42 in prior year)

Retired Members: 3

Terminated Vested Members: 1

Lump Sum Form of Benefit Payment Available: Yes

### ACTUARIAL INFORMATION

Actuarial Cost Method: Entry Age Normal

Assumed Rate of Return: 7.50%

Assumed Rate of Payroll Growth: \$1,200 per annum, per member.

Retirement Eligibility Conditions: Age 60 or 30 years of service for normal, age 50 or 20 years of service for reduced early

Retirement Assumptions: 100% at age 60 or 30 years of service

Mortality Assumption: Based on 1983 Group Annuity Mortality, set back 6 years for women

Types of Optional Forms of Payment: N year certain, joint and survivor, and lump sum

Basis for Optional Forms of Payment: For lump sums, Monthly Accrued Benefit multiplied by 165

GASB Information in Report: Yes

Actuarial Consulting Firm: Milliman USA, St. Louis

Historical Information					
Valuation Feb. 1	Valuation Assets <sup>@</sup>	Benefit Payments	Contribution <sup>#</sup> Made	PVFB <sup>##</sup>	GASB Funded Ratio
1997	\$2,995,961	681,981	\$887,480	\$7,424,076	55.94%
1998	3,215,320	527,077	488,138	7,818,477	61.85
1999	4,038,797	93,406	619,431	8,408,565	69.93
2000	3,929,926	399,686	669,142	8,896,882	64.30
2001	4,126,820	497,235	623,866	11,807,491	56.08

<sup>@</sup> Actuarial Value used.

<sup>#</sup> Employer contributions shown, employees contribute 1% of payroll.

<sup>##</sup> Present Value of Future Benefit payments

### COMMENTS

Data reconciliations indicate that one lump sum distribution per year was paid out in 4 out of the last 5 years. This is reflected in the benefit payments shown above. A table of Participants Eligible for Retirement as of the valuation date is given in the report, but no associated liability projection is provided. As of February 1, 2001, 14 members were on this list.



#### COMMENTS (CONTINUED)

- The lump sum conversion factor of 165 times Monthly Accrued Benefit appears to provide this form of payment at a subsidy. If conversion factors used for lump sum option calculations are favorable to members, there will be experience losses for the plan (unless provided for in the valuation).
- There could be several lump sum cash outs in the next year. If all of the 14 members who are eligible actually cash out, assets in the fund could be depleted by \$3 to \$4 million.
- For the last couple of years, an already low funded ratio has been decreasing. In the long term, it may be difficult for this plan to sustain lump sum distributions and potential experience losses.

**It is recommended that a cash flow projections to evaluate emerging pay outs be undertaken and short-term potential cash flow problems be evaluated. Also, asset allocation should be reviewed.**

# MEHLVILLE FIRE PROTECTION DISTRICT

## GENERAL INFORMATION

Most Recent Valuation Date: 1/1/2001  
Active Members: 143  
Retired Members: 43  
Terminated Vested Members: 5  
Lump Sum Form of Benefit Payment Available: Yes

## ACTUARIAL INFORMATION

Actuarial Cost Method: Entry Age Normal  
Assumed Rate of Return: 8.00%  
Salary Scale: 6.5%  
Retirement Eligibility Conditions: Age 58 for normal retirement, age 55 and 5 years of service for early retirement.  
Retirement Assumptions: Normal Retirement Age or attained age if greater  
Mortality Assumption: 1971 Group Annuity Mortality projected to 1976 setback 6 years for females for pre-retirement, 1983 GAM male and female for post-retirement  
Types of Optional Forms of Payment: Joint and survivor  
Basis for Optional Forms of Payment: For lump sums, post retirement valuation basis, otherwise 7% and UP84 male mortality set forward one year  
GASB Information in Report: Yes  
Actuarial Consulting Firm: Milliman USA, St. Louis

Historical Information					
Valuation Jan. 1	Valuation Assets <sup>@</sup>	Benefit Payments	Contribution Made	PVFB <sup>#</sup>	GASB Funded Ratio
1997*	\$25,170,669	—*	\$959,710	\$36,073,347	99.70%
1998	28,384,149	913,729	993,828	38,397,625	104.97
1999	30,046,827	2,194,219	1,007,231	40,276,379	105.16
2000	32,531,464	1,410,710	1,340,810	48,417,724	97.80
2001	35,673,381	1,066,184	1,439,848	52,640,619	97.34

\* Report not provided

@ Five Year Smoothed

# Present Value of Future Benefits

## COMMENTS

In the prior 4 years, 4 members out of 15 retirements chose the lump sum optional form of benefit payment (3 in 1999, 1 in 2000). A table of Participants Eligible to Commence a Pension as of the valuation date is given in the report, but no associated liability projection is provided. As of January 1, 2001 there were 15 members in this table.

#### **COMMENTS (CONTINUED)**

- Although asset levels are sufficient to cover lump sum disbursements in the short term, cash outs will exert downward pressure on funded ratios.
- Asset allocation and investment options may ultimately be limited.

**Plan raises no immediate concern but should continue to be monitored for potential depletion of assets.**

# METRO WEST FIRE PROTECTION DISTRICT

## GENERAL INFORMATION

Most Recent Valuation Date: 1/1/2001

Number of Active Members: 98

Number of Retired Members: 23

Number of Terminated Vested Members: 6

Lump Sum Form of Benefit Payment Available: Unknown

## ACTUARIAL INFORMATION

Actuarial Cost Method: Aggregate

Assumed Rate of Return: 7.50%

Salary Scale: 5.00%

Retirement Eligibility Conditions: Age 55 and 10 years of service for normal retirement or age 50 for early retirement.

Retirement Assumptions: Age 55 and 10 years of service.

Mortality Assumption: 1971 Group Annuity Mortality (setback 6 years for females).

Types of Optional Forms of Payment: 10-year certain & life

Basis for Optional Forms of Payment: Unknown.

GASB Information in Report: No.

Actuarial Consulting Firm: QBC, Inc.

Historical Information					
Valuation Jan. 1	Valuation Assets <sup>@</sup>	Benefit Payments	Contribution Made	PVFB <sup>#</sup>	PVAB Funded Ratio
1997	\$9,588,230	\$143,436	\$901,774	\$17,191,180	136%
1998	11,712,948	221,792	748,941	18,215,677	151
1999	14,343,626	251,994	1,241,953	24,702,892	145
2000	17,464,428	266,153	1,491,668	27,870,182	147
2001	17,967,144	335,819	1,072,030	31,978,867	133

<sup>@</sup> Market Value used.

<sup>#</sup> Present Value of Future Benefits

<sup>##</sup> Present Value of Accrued Benefits

## COMMENTS

The Summary of Plan Provisions in the actuarial report is limited and somewhat unclear. It does not mention the existence of a lump sum option. The actuary provides a listing of projected retirement benefits and a listing of accrued and vested benefits for all participants. Nine members are within 5 years of their normal retirement date. GASB funded ratios are not given in the report. Funded ratios are given for accrued and vested accrued benefits but the basis for this calculation is not stated.

## COMMENTS (CONTINUED)

- Lump sum cash outs are not indicated by the pattern of benefit payments.
- The Plan is fully funded. However, the reported funded ratio may be misleading as the calculation basis is unclear.
- If the plan provides for a lump sum cash out option, it is likely that asset levels are sufficient to cover lump sum disbursements in the short term. However, cash outs will exert downward pressure on long-term funded ratios.
- Assets appear to be invested over 50% in stocks, asset allocation and investment options will continue to be limited. Asset allocation may ultimately need to be modified.

**This Plan raises no immediate concern but should continue to be monitored for potential depletion of assets, if it is determined that it provides a lump sum option at retirement.**

## MID-COUNTY FIRE PROTECTION DISTRICT

### GENERAL INFORMATION

Most Recent Valuation Date: 1/1/2001

Active Members: 22

Retired Members: 0

Terminated Vested Members: 4

Lump Sum Form of Benefit Payment Available: Yes

### ACTUARIAL INFORMATION

Actuarial Cost Method: Frozen Initial Liability – Entry Age Normal (Level Dollar)

Assumed Rate of Return: 7.00% pre-retirement, 5.60% post-retirement

Salary Scale: Unknown

Retirement Eligibility Conditions: Age 55 for normal retirement, age 50 and 10 years of service for early retirement (reduction, if any, not stated).

Retirement Assumptions: Not stated.

Mortality Assumption: None, pre-retirement; UP-1984, post-retirement.

Types of Optional Forms of Payment: Straight life with 10 years certain and lump sum

Basis for Optional Forms of Payment: Lump sums at 5.6% and UP-1984; others unknown.

GASB Information in Report: No.

Actuarial Consulting Firm: Affiliated Pension Services

Historical Information					
Valuation Jan. 1	Valuation Assets@	Benefit Payments#	Contribution Made	PVFB#	Funded Ratio
1997*	\$1,050,054	\$339,512	\$ -	\$ -	57%
1998	1,057,649	259,826	132,066	2,056,217	59%
1999	1,125,984	203,743	126,550	2,101,129	62%
2000	701,665	751,418	126,111	1,510,719	52%
2001	656,903	N/A	106,786	1543739	N/A

\* Report not provided

@ Market Value used

# Information from Joint Committee analysis.

### COMMENTS

The actuarial report states that 4 lump sums were paid during 2000, and 1 in 1999. Information is not available for other years. The actuary states in his comments that a lump sum paid at normal retirement with 20 years of service is approximately \$165,000, based on current assumptions.

The actuarial report includes no GASB information but does have minimum required and maximum deductible contribution calculations, pursuant to sections of the IRS code, from which governmental plans are exempt. It is not clear whether contributions are recommended on the basis of these calculations.

## COMMENTS (CONTINUED)

- We were not able to fully evaluate the current financial status of this plan due to the lack of relevant information reported. However, funded ratios provided by the JCPER show a possible deterioration of funded status.
- Given the actuary's estimate of a lump sum payout at retirement, several lump sum cash outs in the next year could substantially decrease assets in the fund.
- The actuary has opined that, in the short term, the plan should be able to sustain lump sum cash outs. In the long term, this may be difficult.

**Plan should be reviewed to make a final determination of financial status and sustainability. If funded ratios are low (likely), a cash flow projection of the plan should also be undertaken. Asset allocation should be reviewed.**

# ROCK COMMUNITY FIRE PROTECTION DISTRICT

## GENERAL INFORMATION

Most Recent Valuation Date: 1/1/2001

Active Members: 38

Retired Members: 0 retired, 1 disabled

Terminated Vested Members: 4

Lump Sum Form of Benefit Payment Available: Probably Not

## ACTUARIAL INFORMATION

Actuarial Cost Method: Projected Unit Credit, annuities purchased for retired lives, retired life assets and liabilities excluded from valuation.

Assumed Rate of Return: 7.5%

Salary Scale: 5.0%

Retirement Eligibility Conditions: Age 60 with 5 years of service, normal retirement; age 55 with 5 years of service, early retirement.

Retirement Assumptions: Age 60 or attained age if greater.

Mortality Assumption: 1983 Group Annuity Mortality (setback 6 years for females).

Types of Optional Forms of Payment: Straight life, 10 years certain and joint and survivor

Basis for Optional Forms of Payment: Not stated.

GASB Information in Report: Yes

Actuarial Consulting Firm: Milliman USA, St. Louis

Historical Information					
Valuation Jan. 1	Valuation Assets <sup>@</sup>	Benefit Expense	Contribution Made	AAL <sup>#</sup>	GASB Funded Ratio
1997	\$1,712,984	\$17,805	\$168,000	\$2,031,266	84.33%
1998	1,590,051	448,682	140,000	1,833,586	86.72
1999	1,919,081	18,744	192,000	2,163,358	88.71
2000	2,267,275	18,744	165,000	2,474,730	91.62
2001	2,524,356	18,744	201,000	2,762,337	91.38

<sup>@</sup> Market Value\Contractual Value

<sup>#</sup> Actuarial Accrued Liability on a Projected Unit Credit basis for active members. Present Value of Future Benefits not given in report.

## COMMENTS

The actuary provides an age and service schedule in the report. Based on this schedule, 2 members are currently eligible to retire under normal or early conditions and 2 more members are eligible within 5 years. There is no specific mention of lump sum benefit payouts in the report and a review of benefit payments leads us to believe there were no lump sum distributions. The large benefit expense in 1998 appears to be due to an annuity purchase for a retiree.



## COMMENTS (CONTINUED)

- Lump sum distributions are not indicated by the pattern of benefit payments.
- The Plan is nearly fully funded under GASB No. 25.
- If the plan provides for a lump sum cash out option, it is likely that asset levels are sufficient to cover lump sum disbursements in the short term. However, cash outs will exert downward pressure on funded ratios.

**This Plan raises no immediate concern but should continue to be monitored for potential depletion of assets, if it is determined that it provides a lump sum option at retirement.**

# VALLEY PARK FIRE PROTECTION DISTRICT

## GENERAL INFORMATION

Most Recent Valuation Date: 1/1/2001  
Active Members: 22  
Retired Members: Not stated  
Lump Sum Form of Benefit Payment Available: Yes

## ACTUARIAL INFORMATION

Actuarial Cost Method: Projected Unit Credit  
Assumed Rate of Return: 7.50%  
Salary Scale: 4.00%  
Retirement Eligibility Conditions: Age 55  
Retirement Assumptions: Age 55  
Mortality Assumption: None, pre-retirement, 1983 Group Annuity Mortality, post-retirement.  
Types of Optional Forms of Payment: 5,10,15 year certain, joint and survivor, lump sum.  
Basis for Optional Forms of Payment: Not stated.  
GASB Information in Report: No  
Actuarial Consulting Firm: Milliman USA, Omaha

Historical Information					
Valuation Jan. 1	Valuation Assets <sup>@</sup>	Benefit Expense <sup>#</sup>	Contribution Made <sup>##</sup>	AAL <sup>###</sup>	Funded Ratio <sup>@@</sup>
1997*	\$	\$-	\$-	\$-	-%
1998*		-	-	-	-
1999	560,971	-	-	738,062	76.01
2000	730,208	-	-	925,886	78.87
2001	804,071	-	-	983,040	81.79

\* Report not provided

@ Market Value used. Values shown are net of estimated liability for terminated participants.

# Benefit expenses not shown in report.

## Contributions made not shown in report.

### Actuarial Accrued Liability on a Projected Unit Credit basis for active members. Present Value of Future Benefits not given in report.

@@ Calculated from Valuation Assets and AAL

## COMMENTS

The actuary provides a schedule of active participants but it does not include service. There is no other information in the report that would allow for the determination of the number of possible retirements in the near future. The report does not contain GASB information, asset reconciliation, data reconciliation, or any comments by the actuary. The page titled "Annual Contribution Detail - Funding Standard Account Charges" may indicate that the actuary may be applying minimum required and maximum deductible contribution limits in the calculation of the contribution rates.

## COMMENTS (CONTINUED)

- We were not able to fully evaluate the current financial status of this plan due to the lack of relevant information reported.
- Several lump sum cash outs in the next year could substantially decrease assets in the fund.
- Although funded ratios were developed from information in the report, they may not be comparable to reported ratios in other plans.

**Plan should be reviewed to make a final determination of financial status and sustainability. If funded ratios are low (likely), a cash flow projection of the plan to determine emerging liability due pay outs should also be undertaken.**

